

# AN OUNCE OF PREVENTION: TB INFECTION CONTROL STRATEGIES AND THE TB BASICS MODEL

## OVERVIEW

No healthcare worker should become infected with tuberculosis (TB) from simply going to work and no client should leave a health clinic with a new infection. Unfortunately, TB transmission has been well-documented in healthcare and other congregate settings, which can become amplification points for transmission if infection control measures are not rigorously and routinely applied. Such transmission affects both patients and healthcare workers, especially people living with HIV (PLHIV) who are particularly vulnerable to infection and progression from TB infection to disease. Large-scale nosocomial transmission in health facilities has been linked to the resurgence of drug-resistant TB in New York City in the 1990s and to outbreaks of extensively drug-resistant (XDR-TB) in South Africa.

Protecting our healthcare workforce is not optional – to ensure effective public health programs we must maintain our first line of defense by ensuring health workers are not exposed to TB or other deadly infections during their routine work. The urgency of reducing TB transmission in healthcare and other congregate settings has also been intensified by the emergence of drug-resistant TB strains, which are more deadly and costly than drug-susceptible strains.

As we lead the global scale-up of universal antiretroviral treatment (ART), we also expect to see a rise in PLHIV attending HIV care and treatment programs. If we do not act with greater urgency to scale-up effective infection control interventions in this new era, we risk exposing vulnerable individuals to TB – the leading cause of death among all PLHIV – at the same time they receive life-saving ART.

All facilities, particularly facilities providing HIV clinical services, must have rigorous infection control measures in place to 1) protect the health workforce providing critical HIV testing, counseling, and treatment services; 2) ensure high-quality services and access to care for patients seeking HIV clinical services critical to meeting 90-90-90 targets; and 3) reduce likelihood of exposure to TB and other opportunistic infections that can put the lives of patients and health workers at risk.

The World Health Organization (WHO) has identified TB infection control in health care facilities and congregate settings, as well as households, as a core component of global TB control efforts.

## CDC'S ROLE

The U.S. Centers for Disease Control and Prevention (CDC) has a unique, multidisciplinary team with expertise in tuberculosis, airborne infection control, engineering, facility design, and healthcare epidemiology. This combination of public health assets allows CDC to work globally to:

- Provide technical assistance to ministries of health to design and implement effective infection control policies;
- Build capacity for infection control through multi-disciplinary trainings and mentorship programs;
- Design, implement and systematically evaluate innovative strategies aimed at reducing TB transmission in institutional settings;
- Assist health facilities to establish systems for monitoring disease transmission and incidence, especially among health care workers;
- Conduct operational research to build an evidence base for improved strategies and practices for breaking the cycle of transmission; and
- Translate science and evidence-based policy into public health programs.

## ACCOMPLISHMENTS / RESULTS

In 2013, CDC launched TB BASICS (Building and Strengthening Infection Control Strategies), a collaborative, global TB initiative designed to assist countries with high TB, MDR-TB and HIV burdens in assessing and improving TB infection control practices in health facilities using a continuous quality improvement approach.

Since its launch, 15 countries on 3 continents – South America, Africa, and Asia – have started TB BASICS initiatives. The tools can be tailored to the local context and have been translated into eight languages. Implementation of the programs has resulted in a 76 percent improvement in TB infection control practices, and improvements were detected as early as two months after initiation. The program’s accomplishments are an example of CDC’s global reach and its ability to foster dissemination of science and support implementation of evidence-based public health policy.

## FUTURE EFFORTS

CDC’s future TB infection control activities include:

- Scaling-up and mainstreaming evidence-based infection control interventions in all CDC-supported antiretroviral treatment sites;
- Incorporating TB infection control measures into Site Improvement Monitoring System and health facility assessments;
- Assisting Ministries of Health and healthcare facilities in establishing systems for monitoring for TB (infection and disease) among healthcare workers, which is an occupational health and workplace safety issue but also an indicator of the effectiveness of TB infection control;
- Initiating TB infection control programs in other high-risk congregate settings where there is an increased risk for TB transmission, such as prisons;
- Developing training programs in high burden TB settings to help develop cadres of skilled infection control personnel; and
- Using newer technologies to enhance disease detection and monitor program performance.

## BENEFITS OF OUR WORK

The anticipated benefits of these efforts include:

- Reduction in TB-related morbidity and mortality among patients and healthcare workers and PLHIV;
- Programmatic scale-up of effective, sustainable TB infection control programs for healthcare and other congregate settings; and
- Improved quality and safety in the delivery of healthcare services.